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U. S. DEPARTMENT OF AGRICULTURE.

FARMERS' BULLETIN 350.

THE DEHORNING OF CATTLE.

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BY

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LETTER OF TRANSMITTAL.

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF ANIMAL INDUSTRY,
Washington, D. C., December 9, 1908.

SIR: I have the honor to transmit herewith a paper on "The Dehorning of Cattle," by Dr. Richard W. Hickman, chief of the Quarantine Division of this Bureau. This article was included in the Twenty-fourth Annual Report of the Bureau, but in order to make it available for distribution in pamphlet form, in response to requests for information on this subject, its publication as a Farmers' Bulletin is recommended.

Respectfully,

A. D. MELVIN,
Chief of Bureau.

Hon. JAMES WILSON,
Secretary of Agriculture.

CONTENTS.

	Page.
Simple method of restraining the animals	7
Where to cut the horns	8
Instruments for dehorning	8
Treatment after dehorning	10
Is dehorning cruel	11
Dehorning on the range	11
To prevent horns growing on young calves	13

ILLUSTRATIONS.

		Page.
FIG. 1.	Method of tying cow to stanchion rail	8
2.	Horns showing (*a*) proper and (*b*) improper cutting	9
3.	Head of steer showing result of proper dehorning	10
4.	Head of steer showing results of improper dehorning	10
5.	Dehorning a steer held in a "squeezer" connected with corral	12
6.	Dehorning an animal on the range	13

350

THE DEHORNING OF CATTLE.

SIMPLE METHOD OF RESTRAINING THE ANIMALS.

The dehorning of cattle can be very satisfactorily performed without other apparatus or instruments than a good strong clothesline and a clean sharp meat saw, or a miter saw with a rigid back. The same simple means for controlling the animal is just as applicable when dehorning clippers are to be used as when the horns are to be removed with the saw. The head of the animal is secured to the horizontal rail or stringer which holds the upper ends of the stanchion boards. The animal is put in the stanchion in the usual manner; then one end of a heavy clothesline is passed around the upper part of the neck and tied in a knot that will not slip, otherwise it will choke the animal. The free end of the rope is now carried between the horns, through the stanchion to the front, up and over the horizontal stanchion rail, then down underneath the neck and up and over the top of the stanchion rail to an assistant, who should hold it firmly. Now open the stanchion, allowing the animal to withdraw its head; then, keeping the rope tight, pass it once around the muzzle, up and over the stanchion rail, and through to the front again to the hands of the assistant, who should stand 3 or 4 feet in front of the animal and hold the rope firmly, but prepared to release it when told to do so by the operator. The animal is now ready for the dehorning operation.

It is necessary that the rope be held by an assistant, as in the event of the animal struggling during the operation so as to throw itself off its feet, or if there appears to be danger of its choking, the rope may be slackened promptly at the word of the operator and the animal partly released. This, however, is rarely necessary, for as soon as the head is secured the operator should be ready, standing at the right shoulder of the animal with his saw, and proceed to saw off first the right and then the left horn. Figure 1 shows the animal and the operator in position for the dehorning operation by this method. It is a good plan before commencing the real work to experiment upon an animal in the matter of control by tying the head to the stanchion rail as described.

If the stanchion rail is too wide to permit of properly securing the lower part as well as the upper part of the animal's head, the turn of the rope around the muzzle may be omitted and the last lap of the

rope carried around the stanchion rail to the front and to the hands of the assistant. Care should be taken that the rope pass each time over the neck of the animal to the stanchion rail between the horns in such a way that it will not interfere with the work of the saw.

WHERE TO CUT THE HORNS.

The horns should be severed from a quarter to a half inch below where the skin joins the base of the horn, cutting from the back toward the front.

If the cut is made too high an irregular, gnarly growth of horn is very apt to follow. It will be seen that the point of union of the skin

FIG. 1.—Method of tying cow to stanchion rail.

and horn varies in different cattle; hence there can be no rule of measurement, except as the eye becomes trained to see the point or line at which the cut should be made. In the beef breeds fully one-half inch of skin, all around, is usually taken off with the horn.

Figure 2 illustrates the difference between a proper and an improper cutting, and figures 3 and 4 show the appearance of animals' heads after proper and improper dehorning.

INSTRUMENTS FOR DEHORNING.

In recent years, since dehorning shears or clippers have come into use, this means of dehorning is considered by some cattle owners to be preferable, especially where large numbers of cattle are to be dehorned. One type of dehorner has a stationary knife blade, with

its cutting edge shaped like a very wide V, and opposing this another knife of similar shape, moving in a slide, so that the cutting edges cut the horn from all four sides at once, all the edges passing the center at the same time. Another type has a movable knife with one oblique or one curved edge, and the cutting is done in one direction only. The power for cutting with these instruments is supplied by pulling together two long handles, which, in order to transmit a greater force, are generally so constructed that they act through the medium of a series of cogs.

In dehorning with these instruments the opening between the cutting edges should be slipped down over the horn and the knives closed so that their edges set firmly against the horn in such a position that the cut will be made in the right place and in the right direction. The blades should be kept covered with a thick oil or grease. The handles should be drawn together with a quick, firm, strong pull, so that the horn will be completely severed by the first act and without twisting. Care should be taken to keep the blades sharpened on their original bevel.

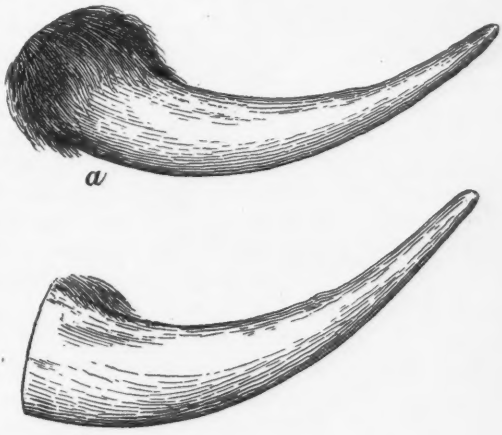

FIG. 2.—Horns showing (*a*) proper and (*b*) improper cutting.

Dehorning instruments can be procured of the manufacturers and of dealers in veterinary instruments.

In dairy districts adjacent to large cities there are men who go about from farm to farm dehorning animals, charging for their services in some instances as little as 5 cents per horn or 10 cents per animal.

There was published in the report of the New Zealand department of agriculture for 1904 a description of the operation of dehorning cattle by the government veterinarian at New Plymouth, in which it was shown that a cage had been used for the restraint of the animals during the operation, closely resembling the box used for hoisting horses out of ships, this cage being hauled on a wagon from farm to farm as needed. In discussing the various means for the removal of the horns the report was very favorable to the use of the saw in dehorning

full-grown cattle. It was stated that in the dehorning of over 10,000 cows with the saw there were no deaths due to the operation, while in cows dehorned by shears there was trouble afterwards in healing of the wounds, due, no doubt, to the crushing, fracturing action which this instrument has upon old horns, where ossification of the cores is advanced. Because of this condition it was recommended that for mature animals a bone saw be used.

FIG. 3.—Head of steer showing result of proper dehorning.

TREATMENT AFTER DEHORNING.

It is not usual to apply any preparation after the operation of dehorning to prevent bleeding, as the loss of blood is not sufficient, as a rule, to be of consequence. Care should be taken, however, to prevent substances from getting into the openings left after the horns are removed. The horn cores are elongations of the frontal bones of the skull, and are hollow. They communicate with the frontal sinuses, or air spaces, of the head; therefore foreign substances or fragments of horn which act as an irritant in these cavities are apt to set up an inflammation, resulting in the formation of pus or an abscess, which may prove quite serious. This trouble is of infrequent occurrence, but would appear more liable to happen when the dehorning instruments are used, on account of their tendency to crush, especially in the case of old animals, whereas the saw cuts clean. If proper care is taken, however, such an occurrence following dehorning may in almost every instance be avoided.

FIG. 4.—Head of steer showing results of improper dehorning.

Occasionally animals after being dehorned and turned out of the stable will rub their heads against a dirt or gravel bank or the rough bark of a tree, and foreign material may thus get into the cavities, though usually the soreness of the parts is sufficient to prevent this.

If the animals are dehorned in warm weather, it is well to apply some pine tar with a view to keeping flies from the wounds. Some operators do this in nearly all cases, thinking that it facilitates healing. The dehorning operation should always, when possible, be performed in cool weather, and upon animals which have at least attained the age of two years.

IS DEHORNING CRUEL?

Inquiries are frequently received as to whether the operation of dehorning is very painful, and whether it may not be classed as cruelty to animals. Those who have had an extensive experience in dehorning appear to agree that the pain induced by the operation has been greatly overestimated, as careful observation has shown that shrinkage in the yield of milk as well as of butterfat following the dehorning of cows is very temporary and insignificant. On the other hand, the worry, pain, and cruelty often inflicted by cattle upon their mates before being deprived of their horns is much more to be considered, and not infrequently results in the death of a valuable animal. A neighbor on an adjoining farm to that owned by the writer a few years ago lost two good milch cows in one winter through their being disemboweled by the horns of barnyard mates while out for exercise. He dehorned his entire herd almost immediately afterwards. The increased safety of the animals much more than compensates for any loss of beauty resulting from the removal of horns.

DEHORNING ON THE RANGE.

While the cattle ranchman of the West seems to be equal to every requirement and emergency of his vocation, and is probably informed with regard to the dehorning of his stock, this article would be incomplete without a description of the dehorning operation as practiced in that part of the country.

In the range country of the West dehorning has been extensively practiced for a number of years, and various methods have been used in restraining the animals, as well as in removing their horns. In some instances the methods used are extremely crude, consisting in simply roping and throwing the animal and cutting off the horns with an ax. Most frequently, however, no matter what may be the means of control, either the saw or the dehorning shears are used. As a general thing the corral and chute which form a part of the equipment of every well-appointed cattle ranch are used for this purpose. Dehorning with an ax should never be attempted, as, no matter how keen the edge of the ax or how true the aim of the axman, he is working on a living animal, and only a slight movement of the head would result in a deviation of the stroke, and would thus be liable to cause,

if nothing more serious, the infliction of unnecessary pain and suffering to the animal.

It is the usual custom in the West to gather the cattle to be dehorned in a corral, either during the early spring, before the fly season begins, or in the fall, after the fly season has passed. At one side of this corral is a gate opening into another smaller inclosure, which is known as the chute pen. The sides of this converge to form an entrance into a narrow chute, which is usually made long enough for about three cattle, though but one is permitted to enter the working end of the chute at a time, the others being kept back by crossbars. At the front end of this chute is what is known as a squeezer,

FIG. 5.—Dehorning a steer held in a "squeezer" connected with corral.

the formation of which is best understood by a reference to the illustration (fig. 5). After the animal enters the squeezer the squeeze gate is pressed close against its side to prevent lateral movement, the stanchion is closed on the neck, and the head is turned and secured to the post by means of a nose clamp and lead rope, first at one side of the chute and then the other, as required for the removal of the horns.

In the construction of these chutes it is usual to have on the side opposite the squeeze gate a movable plank which can be taken out to expose the side of the animal for branding. In the entire construction of such a corral and chute it is best not to economize in lumber or bolts, as it should be strong and durable, so that the animal may be controlled without danger to itself or to the operator.

Another method of restraint is to throw the animal and hold it stretched flat on the ground by means of a rope around its neck held by a man on horseback with a turn around the saddle pommel, a second rope being around the hind feet, similarly held by another man on horseback. In the absence of horses these ropes can be secured by taking a turn around a post. After the animal is thus secured an assistant grasps the nose and upper horn, turning the head so that the lower horn can be removed first. This obviates the danger of fracturing the lower horn, and allows the blood to flow directly on the ground and the head to be held flat for the removal of the upper horn. As shown in the illustration (fig. 6) the dehorning shears are frequently used, but there seems to be a tendency in some localities toward giving preference to the saw.

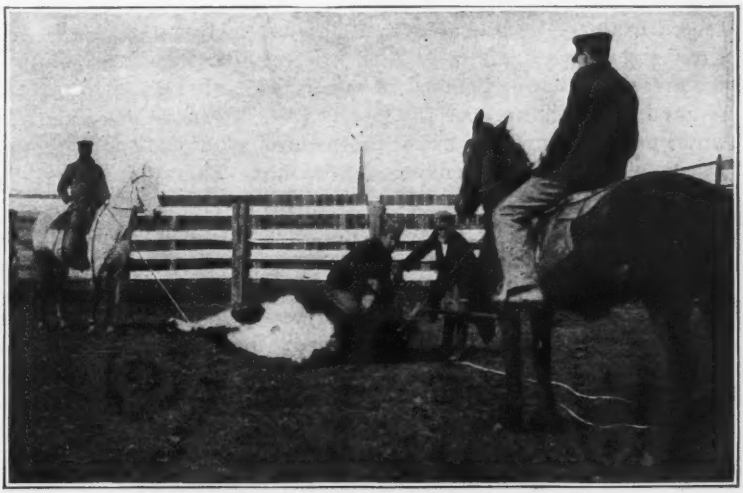

FIG. 6.—Dehorning an animal on the range.

Many ranchmen apply preparations of pine tar and alcohol, or pine tar and turpentine, after dehorning, to lessen the bleeding and keep the flies away.

TO PREVENT HORNS GROWING ON YOUNG CALVES.

When circumstances are favorable, as in the case of farmers who build up their herds by raising the progeny, the horns may be prevented from growing by a simple and practically painless method, and the custom of preventing the growth of the horns is becoming more popular and more generally practiced under all conditions except in the case of calves dropped on the open range. The calf should be treated not later than one week after its birth, preferably when it is

from three to five days old. The agent to be used may be either caustic soda or caustic potash, both of which may be procured in the drug stores in the form of sticks about the thickness of an ordinary lead pencil and 5 inches long. These caustics must be handled with care, as they dissolve the cuticle and may make the hands or fingers sore. The preparation of the calf consists in first clipping the hair from the parts, washing clean with soap and warm water, and thoroughly drying with a cloth or towel. The stick of caustic should be wrapped in a piece of paper to protect the hands and fingers, leaving one end of the stick uncovered.

Moisten the uncovered end slightly and rub it on the horn buttons or little points which may be felt on the calf's head, first on one and then the other, alternately, two or three times on each, allowing the caustic to dry after each application. Be very careful to apply the caustic to the horn button only. If it is brought in contact with the surrounding skin it will cause pain. Be very careful also not to have too much moisture on the stick of caustic, as it will remove the skin if allowed to run down over the face. After treatment, keep the calf protected from rain, as water on the head after the application of caustic will cause it to run down over the face. This must be carefully avoided.

Either caustic soda or caustic potash alone, without the admixture of other substances, answers the purpose satisfactorily. Some years ago, however, certain preparations or "dehorning compounds," composed largely of one or the other of these caustics, were generally used, and as inquiries are still occasionally received concerning such preparations, the following formula is given: Combine in an emulsion 50 per cent of caustic soda, 25 per cent of kerosene, and 25 per cent of water. The caustic soda is dissolved in the water and heated to the boiling point, then removed from the fire, and the kerosene added gradually, while the mixture is vigorously stirred. This emulsion is applied in very much the same manner as the stick caustic, except that it is necessary to employ a short, stiff brush. Sometimes a meat skewer is used, the large end being mashed to form a stubby brush. Two or three applications should be made to each horn button, as in the case of the stick caustic, with intervals to allow it to dry.

In the very young calf the horn button, or point that will ultimately develop into a horn, has scarcely any attachment to the skull, and may be felt as a small button embedded in the skin. In this early stage it may be easily removed with a sharp knife or a pair of curved scissors, but even then caustics should be applied to kill any remaining cell life belonging to this germ point; otherwise there may be some subsequent irregular horn growth, which is more or less of a disfigurement.

FARMERS' BULLETINS.

The following is a list, by number, of the Farmers' Bulletins available for distribution. The bulletins entitled "Experiment Station Work" give in brief the results of experiments performed by the State experiment stations. Titles of other bulletins are self-explanatory. Bulletins in this list will be sent free to any address in the United States on application to your Senator, Representative, or Delegate in Congress, or to the Secretary of Agriculture, Washington, D. C. Numbers omitted have been discontinued, being superseded by later bulletins.

22. The Feeding of Farm Animals. PPp. 40.
24. Hog Cholera and Swine Plague. Pp. 16.
27. Flax for Seed and Fiber. Pp. 16.
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69. Experiment Station Work—III. Pp. 32.
71. Essentials in Beef Production. Pp. 24.
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74. Milk as Food. Pp. 39.
77. The Liming of Soils. Pp. 24.
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79. Experiment Station Work—VI. Pp. 27.
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83. Tobacco Soils. Pp. 23.
84. Experiment Station Work—VII. Pp. 32.
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87. Experiment Station Work—VIII. Pp. 32.
88. Alkali Lands. Pp. 23.
91. Potato Diseases and Treatment. Pp. 15.
92. Experiment Station Work—IX. Pp. 30
93. Sugar as Food. Pp. 31.
96. Raising Sheep for Mutton. Pp. 48.
97. Experiment Station Work—X. Pp. 32.
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99. Insect Enemies of Shade Trees. Pp. 30.
100. Hog Raising in the South. Pp. 40.
101. Millets. Pp. 30.
102. Southern Forage Plants. Pp. 48.
103. Experiment Station Work—XI. Pp. 30.
104. Notes on Frost. Pp. 24.
105. Experiment Station Work—XII. Pp. 32.
106. Breeds of Dairy Cattle. Pp. 48.
107. Experiment Station Work—XIII. Pp. 32.
110. Rice Culture in the United States. Pp. 28.
112. Bread and Bread Making. Pp. 40.
113. The Apple and How to Grow It. Pp. 32.
114. Experiment Station Work—XIV. Pp. 28.
116. Irrigation in Fruit Growing. Pp. 48.
118. Grape Growing in the South. Pp. 32.
119. Experiment Station Work—XV. Pp. 30.
120. Insects Affecting Tobacco. Pp. 32.
121. Beans, Peas, and Other Legumes as Food. Pp. 38.
122. Experiment Station Work—XVI Pp. 32.
124. Experiment Station Work—XVII. Pp. 32.
125. Protection of Food Products from Injurious Temperatures. Pp. 24.
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127. Important Insecticides. Pp. 46.
128. Eggs and Their Uses as Food. Pp. 40.
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134. Tree Planting in Rural School Grounds Pp. 32.
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147. Winter Forage Crops for the South. Pp. 40
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161. Practical Suggestions for Fruit Growers. Pp. 30.
162. Experiment Station Work—XXI. Pp. 32.
164 Rape as a Forage Crop. Pp. 16.
165. Silkworm Culture. Pp. 32.
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169. Experiment Station Work—XXII. Pp. 32.
170. Principles of Horse Feeding. Pp. 44.
172. Scale Insects and Mites on Citrus Trees Pp. 43.
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178. Insects Injurious in Cranberry Culture. Pp. 32.
179. Horseshoeing. Pp. 30.
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182. Poultry as Food. Pp. 40.
183. Meat on the Farm: Butchering, Curing, and Keeping. Pp. 37.
185. Beautifying the Home Grounds. Pp. 24.
186. Experiment Station Work—XXIII. Pp. 32.
187. Drainage of Farm Lands. Pp. 38.
188. Weeds Used in Medicine. Pp. 45.
190. Experiment Station Work—XXIV. Pp. 32
192. Barnyard Manure. Pp. 32.
193. Experiment Station Work—XXV. Pp. 32.
194. Alfalfa Seed. Pp. 14.
195. Annual Flowering Plants. Pp. 48.
196. Usefulness of the American Toad. Pp. 16.
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198. Strawberries. Pp. 24.
199. Corn Growing Pp. 32.
200. Turkeys. Pp. 40.
201. Cream Separator on Western Farms. Pp. 23.
202. Experiment Station Work—XXVI. Pp. 32.
203. Canned Fruits, Preserves, and Jellies. Pp. 32.
204. The Cultivation of Mushrooms. Pp. 24.
205. Pig Management. Pp. 45.
206. Milk Fever and Its Treatment. Pp. 16.

Bird

209 Controlling the Boll Weevil in Cotton Seed and at Ginneries. Pp. 32.
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211. The Use of Paris Green in Controlling the Cotton Boll Weevil. Pp. 23.
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221. Fungous Diseases of the Cranberry. Pp. 16.
222. Experiment Station Work—XXVIII. Pp. 32.
223. Miscellaneous Cotton Insects in Texas. Pp. 24.
224. Canadian Field Peas. Pp. 16.
225. Experiment Station Work—XXIX. Pp. 32.
227. Experiment Station Work—XXX. Pp. 32.
228. Forest Planting and Farm Management. Pp. 22.
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233. Experiment Station Work—XXXI. Pp. 32.
234. The Guinea Fowl. Pp. 24.
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237. Experiment Station Work—XXXII. Pp. 32.
238. Citrus Fruit Growing in the Gulf States. Pp. 48.
239. The Corrosion of Fence Wire. Pp. 32.
241. Butter Making on the Farm. Pp. 32.
242. An Example of Model Farming. Pp. 16.
243. Fungicides and Their Use in Preventing Diseases of Fruits. Pp. 32.
244. Experiment Station Work—XXXIII. Pp. 32.
245. Renovation of Worn-Out Soils. Pp. 16.
246. Saccharine Sorghums for Forage. Pp. 37.
248. The Lawn. Pp. 20.
249. Cereal Breakfast Foods. Pp. 36.
250. The Prevention of Wheat Smut and Loose Smut of Oats. Pp. 16.
251. Experiment Station Work—XXXIV. Pp. 32.
252. Maple Sugar and Sirup. Pp. 36.
253. The Germination of Seed Corn. Pp. 16.
254. Cucumbers. Pp. 30.
255. The Home Vegetable Garden. Pp. 47.
256. Preparation of Vegetables for the Table. Pp. 48.
257. Soil Fertility. Pp. 39.
258. Texas or Tick Fever and Its Prevention. Pp. 45.
259. Experiment Station Work—XXXV. Pp. 32.
260. Seed of Red Clover and Its Impurities. Pp. 24.
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263. Practical Information for Beginners in Irrigation. Pp. 40.
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272. A Successful Hog and Seed-Corn Farm. Pp. 16.
273. Experiment Station Work—XXXVIII. Pp. 32.
274. Flax Culture. Pp. 36.
275. The Gipsy Moth and How to Control It. Pp. 22.
276. Experiment Station Work—XXXIX. Pp. 32.
277. The Use of Alcohol and Gasoline in Farm Engines. Pp. 40.
278. Leguminous Crops for Green Manuring. Pp. 27.
279. A Method of Eradicating Johnson Grass. Pp. 16.

280. A Profitable Tenant Dairy Farm. Pp. 16.
281. Experiment Station Work—XL. Pp. 32.
282. Celery. Pp. 36.
283. Spraying for Apple Diseases and the Codling Moth in the Ozarks. Pp. 42.
284. Insect and Fungous Enemies of the Grape East of the Rocky Mountains. Pp. 48.
285. The Advantage of Planting Heavy Cotton Seed. Pp. 16.
286. Comparative Value of Whole Cotton Seed and Cotton-Seed Meal in Fertilizing Cotton. Pp. 14.
287. Poultry Management. Pp. 48.
288. Nonsaccharine Sorghums. Pp. 28.
289. Beans. Pp. 28.
290. The Cotton Bollworm. Pp. 32.
291. Evaporation of Apples. Pp. 38.
292. Cost of Filling Silos. Pp. 15.
293. Use of Fruit as Food. Pp. 38.
294. Farm Practice in the Columbia Basin Uplands. Pp. 30.
295. Potatoes and Other Root Crops as Food. Pp. 45.
296. Experiment Station Work—XLI. Pp. 32.
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298. The Food Value of Corn and Corn Products. Pp. 40.
299. Diversified Farming Under the Plantation System. Pp. 14.
300. Some Important Grasses and Forage Plants for the Gulf Coast Region. Pp. 15.
301. Home-Grown Tea. Pp. 16.
302. Sea Island Cotton: Its Culture, Improvement, and Diseases. Pp. 48.
303. Corn Harvesting Machinery. Pp. 32.
304. Growing and Curing Hops. Pp. 39.
305. Experiment Station Work—XLII. Pp. 32.
306. Dodder in Relation to Farm Seeds. Pp. 27.
307. Roselle: Its Culture and Uses. Pp. 16.
309. Experiment Station Work—XLIII. Pp. 32
310. A Successful Alabama Diversification Farm. Pp. 24.
311. Sand-Clay and Burnt-Clay Roads. Pp. 20.
312. A Successful Southern Hay Farm. Pp. 15.
313. Harvesting and Storing Corn. Pp. 32.
314. A Method of Breeding Early Cotton to Escape Boll-Weevil Damage. Pp. 20.
315. Progress in Legume Inoculation. Pp. 20.
316. Experiment Station Work—XLIV. Pp. 32.
317. Experiment Station Work—XLV. Pp. 32.
318. Cowpeas. Pp. 26.
319. Demonstration Work in Cooperation with Southern Farmers. Pp. 22.
320. Experiment Station Work—XLVI. Pp. 32.
321. The Use of the Split-Log Drag on Earth Roads. Pp. 14.
322. Milo as a Dry-Land Grain Crop. Pp. 23.
323. Clover Farming on the Sandy Jack-Pine Lands of the North. Pp. 24.
324. Sweet Potatoes. Pp. 39.
325. Small Farms in the Corn Belt. Pp. 29.
326. Building up a Run-Down Cotton Plantation. Pp. 22.
327. The Conservation of Natural Resources. Pp. 12.
328. Silver Fox Farming. Pp. 22.
329. Experiment Station Work—XLVII. Pp. 32.
330. Deer Farming in the United States. Pp. 20.
331. Forage Crops for Hogs in Kansas. Pp. 24.
332. Nuts and their Uses as Food. Pp. 28.
333. Cotton Wilt. Pp. 24.
334. Experiment Station Work—XLVIII. Pp. 32.
335. Harmful and Beneficial Mammals of the Arid Interior. Pp. 31.
336. Game Laws for 1908. Pp. 55.
337. Cropping Systems for New England Dairy Farms. Pp. 24.
338. Macadam Roads. Pp. 39.
339. Alfalfa. Pp. 48.
340. Declaration of Governors for Conservation of Natural Resources. Pp. 8.
341. The Basket Willow. (In press.)
342. Experiment Station Work—XLIX. Pp. 32.
343. The Cultivation of Tobacco in Kentucky and Tennessee. (In press.)

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Copy 3

INDEX.

	Farmers' Bulletin No.	Page.
Acorns, uses as food	332	13, 16, 21–22
Agaricus campestris, mushroom variety, utilization	342	27–29
Agriculture, dry-land. *See* Dry farming.		
Alabama, game laws, 1908	336	13, 30, 39, 43, 49
Alaska, game laws, 1908	336	8, 13, 30, 39, 43, 49
Alcohol, manufacture from sweet potato by-products	334	12
wood, formaldehyde generation	345	7
Alfalfa, clipping, pasturing, etc	339	18–20, 48
composition and feeding value	339	24, 28–31
cultivation, use of disk harrow	342	14–16
destruction by meadow mice	335	11, 19
diseases, remedies, etc	339	41–42
disking, directions, etc	339	19–20, 39, 41, 48
dry-farm crop	329	12, 14
effect on land	339	32
enemies	339	38–42
ensilage suggestions	339	26
fields, preparation, green manure crops	339	9
food for elk and deer	330	12
growing, requirements, difficulties, instructions for different sections, etc	339	7–22, 32–35, 42–48
harvesting, hay and seed	339	22–26, 36
hay. *See* Hay, alfalfa.		
history, value, cultivation, uses, etc	339	1–48
inoculation of soil, necessity, cause of difficulty, etc	326	15–17
leaves, protein content	339	24
meal, manufacture, advantages of using, etc	339	26
mixtures for pasture	339	31
nurse crop, use	339	16–17, 42, 43, 44, 45
pasture for hogs, value, causes of failure, etc	331	6–10
pastures, management	339	27, 31, 48
planting in South, experiments	326	15
poisoned, for rodents, directions for preparing	335	7–8, 12
renovator, description and use	339	19
rotations, long and short, etc	339	32–35
seasonal treatment	339	18–20
seed. *See* Seed, alfalfa.		
bed, preparation	339	12, 34, 42, 43, 44, 45, 46, 47, 48

10387—09——1

	Farmers' Bulletin No.	Page.
Alfalfa, seeding, practices, notes	339	11, 13–17, 31–32, 42–48
soil, inoculation, importance and methods	339	17–18, 42, 43, 45
requirements	339	6, 8–12, 17–18, 42, 43, 44–45, 47, 48
soiling crop use	339	26–27
sowing, quantity per acre	339	16, 42, 43, 44, 45, 47, 48
stand, killing, methods	339	35
varieties	339	37–38
weeds, control, etc	339	11–12, 14, 19–20, 32, 38–40, 43, 44, 47, 48
destroying	342	14–16
Almond crop, California, 1905	332	7
Almonds, use and value as food	332	20–21, 24, 26
Ammospermophilus leucurus, description and control	335	8–9
Animal body, composition, study in relation to feeding stuffs, etc	346	5–6, 9–20
Animals, farm. *See* Live stock.		
fur-bearing, propagation in confinement	328	5
mineral requirements, study	329	22–26
Antelope. *See* Game laws, under the several States.		
squirrel, description and control	335	8–9
Anthracnose, alfalfa, a stem disease, appearance, etc	339	42
Ants, boll weevil, description and habits	344	16
Anvil, types, use and cost	347	14–15
Aphis, cotton, control, relation to boll weevil control	344	39
Apples, keeping quality, relation to temperature	334	17
Arid regions, interior, mammals, harmful and beneficial	335	1–31
Arizona, game laws, 1908	336	14, 30, 39, 43, 49
Arkansas, Crowleys Ridge, improvement of worn-out cotton farm	326	1–22
game law relating to deer	330	19
laws, 1908	336	14, 30, 39, 43, 49
Armsby, Henry Prentiss, bulletin on "The computation of rations for farm animals by the use of energy values"	346	1–32
Army worm, relation to boll weevil control	344	35–36, 46
Arsenate, lead, use in control of tobacco insects in seed bed. *See also* Lead, arsenate.	343	12
Artichokes, hog feed, value	331	17
Ash content, feeding stuffs, study	329	23–26
animal body, percentage and supply	346	5, 6, 9–10
Augers, description, sharpening, etc	347	9
Automobiles, relation to maintenance of macadam roads	338	25–27
Awls, use in harness repair	347	22
Ax, farm, description and cost	347	6–7
Bacteria, bitter-milk, occurrence, source, remedy, etc	348	17–18
lactic-acid, effect on milk	348	14–15
milk	348	1–24
disease-producing	348	20–21
nature, habits of growth, sources, etc	348	7–13, 20–24

	Farmers' Bulletin No.	Page.
Bacteria, nitrogen-fixing, establishment in poor soil	326	16–17
increase in sandy soils	329	8
soil, activity, factors influencing	329	7–8
Badger, occurrence, food habits, need of protection, etc	335	29
Bagging game, laws, 1908	336	7, 43–46
Barley, breeding, directions	334	8
Barleys, wild, alfalfa enemy in irrigated sections	339	38–39
Barns, dairy, Southern States	349	20, 25–26
tobacco, ventilation	343	23–24
Bars, iron, for repairing farm equipment, sizes and cost	347	29
Basket-making industry, conditions in America, location of establishments, etc	341	7–8, 37–42
materials, American	341	35
willow. *See* Willow, basket.		
Baskets, willow, grades, production, cost, use, etc	341	35, 37–42
wooden and willow, cost and use, comparison	341	35, 39–41
Bats, occurrence, usefulness as insect destroyers	335	31
Beans, dried, cooking, tests	342	29–30
protein and energy value	332	26
Bear. *See* Game laws, under the several States.		
BEATTIE, W. R., bulletin on "The repair of farm equipment"	347	1–32
Beef cattle, fattening, use of alfalfa	339	29
Bees, feeding on alfalfa fields	339	31
Beeswax extraction, methods and extractors	334	29–30
Beetle, directions for making	347	20
Beetles, blister, control in alfalfa field	339	41
Beets, sugar, feeding to hogs	331	18
Bermuda grass, forage crop for hogs	331	16
Binder, stone, use on macadam road surface	338	18–19, 20–21
Birch, white, use on lawns	329	18
Birds, carnivorous, value in control of noxious rodents	335	12, 15, 16, 21, 25
game. *See* Game laws, under the several States.		
imported. *See* Game laws, under the several States.		
water or shore. *See* Game laws, under the several States.		
Bits, description and cost, with brace	347	8–9
Bitter milk, bacteria, occurrence, source, remedy, etc	348	17–18
Blackhead in turkeys, prevalence and means of prevention	334	27–28
Blackheart, cotton. *See* Wilt, cotton.		
Black-root, cotton. *See* Wilt, cotton.		
Blacksmith outfit, farmers', use and cost	347	14–15, 18, 26
Bleaching nuts, methods and purposes	332	27
Blight, cotton. *See* Wilt, cotton.		
Bloating, live-stock, from pasturing on alfalfa, remedies, etc	339	20, 27, 29, 31
Blue grass, English, value as forage crop for hogs in Oklahoma	331	16
Bobcat, description, occurrence, habits and control	335	26
Bobwhite. *See* Game laws, under the several States.		
Boll weevil, cotton, control	344	1–46
special treatment of small areas	344	46
damage to crop, means of reducing	344	1–46
description, life history and habits	344	10–18
destruction, methods, successful and fallacious	344	18–23, 29–36, 40–46

	Farmers' Bulletin No.	Page.
Boll weevil, cotton, introduction and spread in United States	344	5–7
parasites and predatory insects	344	15–16, 35, 46
quarantine regulations	344	39–40
Bollworm, cotton, control, relation to boll weevil control	344	38–39
Bolt, thread-cutting outfits, cost	347	18
Bolts, iron, supply for repairing farm equipment	347	29–30
Bone disease of live stock, cause and remedy	329	24–26
meal, use in stock feeding	329	25–26
Borer, fig-tree, damage in Louisiana	342	25
Brace, description and cost, with bits	347	8–9
Bran, feeding to live stock, result	329	25
"Bran rachitis," horse disease, cause	329	25
Brant. *See* Game laws, under the several States.		
Bread, nut, use	332	22
Breeding cotton for wilt resistance, methods and results	333	14–15, 22–24
deer and elk	330	1–20
fox, silver, history, instructions, experiments, etc	328	6–22
plant, on the farm	334	5–9
potatoes	342	10–14
Brewers' grains, use as cow feed, objections	349	17
BRODIE, D. A., bulletin on "Building up a run-down cotton plantation"	326	1–22
"Buddeized" milk, method of sterilization	348	24
Buffalo. *See* Game laws, under the several States.		
Building hog cot, directions	334	31–32
macadam roads	338	1–39
Burley tobacco, grades, market utilization, etc	343	27
origin, characteristic, distribution, etc	343	6
Burning boll weevil infested cotton plants, importance, method, etc	344	18–21, 45
Butter content of milk, method for ascertaining	334	26–27
country, Southern States, quality, production, marketing, etc	349	8–9, 15, 35
creamery, Southern States, production, consumption, and prices	349	7–8, 14, 15, 29
dairy, Southern States, quality, production, marketing, etc	349	8–9, 15
renovated, Southern States, production, consumption, and prices	349	9, 14, 15, 29
Southern States, production, consumption, marketing, etc	349	7–10, 14–15, 29, 35–36
Buttermilk, consumption and prices, Southern States	349	16, 26–27
Butters, nut, manufacture and use	332	18–20
By-products, sweet potato starch manufacture, utilization	334	14
California, alfalfa irrigation, check method	339	46
game laws, 1908	336	14, 30, 39, 44, 49
Calorie, unit of energy value, use	346	12
Calves, horns, methods of preventing growth	350	13–14
raising, southern dairy herd, suggestions	349	33–34
Canada game laws, 1908	336	10–11, 24–27, 35–36, 42, 54–55

	Farmers' Bulletin No.	Page.
Canadian field peas, forage crop for hogs	331	15
Canarium nuts, milk, use as infant food	332	10, 20
Canarium sp., description and importation	332	10
Candies, nut, value as food	332	12, 23
Candle nut, description and caution concerning food use	332	10
Canis lestes, description, habits, and control	335	27–28
Canning figs	342	21
mushrooms, directions	342	27–28
tomatoes, development of industry	334	14
use of cane and beet sugar, comparison	329	30–32
Capercailzie. *See* Game laws, under the several States.		
Carbohydrates, feeding stuffs and animal body	346	7
nuts as source	332	12–13, 14, 15, 16, 17, 25, 28
Carbolic acid, use as disinfectant, advantages and disadvantages	345	8–9
Carbon bisulphid, fumigation of cotton seed for boll weevil destruction	344	36–38
Caribou. *See* Game laws, under the several States.		
Carson Valley, Nevada, mammals	335	1–31
Cashew nut, use as food, poisonous properties	332	10
Castration, deer and elk, remarks	330	9, 13, 17
fox, effect	328	20
Cat, wild, description, occurrence, habits, and control	335	26
Catsup, mushroom, recipe	342	28
Cattle, beef, fattening, value of alfalfa	339	29
bloat, tapping and other remedies	339	27, 31
dehorning. *See* Dehorning.		
feed, protein and energy value, requirements	346	16–20
"lick," recommendations	329	25–26
New England, acreage per head	337	19
pasturing on alfalfa, danger of bloating and remedies	339	20, 27, 31
Cereals. *See* Grains.		
Cervidæ. *See* Deer.		
Cervus canadensis. *See* Elk.		
Chalcis fly, damage to alfalfa seed crop	339	41
Chalk line, directions for making and use	347	11
Check row, system, cotton and corn planting, advantages	326	9, 19, 21
Check-rowing cotton, advantages	344	27, 45
Cheese, Cheddar, production in Southern States	349	11
press, automatic, description and advantages	329	28–29
Southern States, production, consumption, and prices	349	11–12, 14, 16, 29
types consumed, Southern States	349	11
Chestnut, horse, utilization, attempts	332	22
varieties, description and sale	332	9–10
Chestnuts, food use	332	16, 17, 20, 21
Chicken, prairie. *See* Game laws, under the several States.		
Chinese nuts, description and use as food	332	9, 10
Chinquapin, market in southern cities	332	7
Chipmunks, description, control, etc	335	9–10
Chisels, types, use and cost	347	10, 13
Chlorid, lime, preparation and use as disinfectant, advantages and disadvantages	345	11
Chufa, description and classification	332	10

	Farmers' Bulletin No.	Page.
Citellus mollis, description, control, etc	335	6–7
Claw bar, use and directions for making	347	10
Clover crops, New England dairy farm, advantages of using	337	16, 20, 23, 24
red, planting on worn-out cotton lands, result	326	14
seed, quantity per acre on New England dairy farm	337	8, 9, 10, 12, 13, 14, 20, 22
Clovers, forage crops for hogs in Kansas and Oklahoma	331	12–13
winter, in South, planting, time, method, and results	326	14–15
Coal supply, exhaustion, cause and remedy	327	9
Cobalt, use in combating tobacco hornworm	343	19–20
Cocoa butter, manufacture and use	332	19–20
Cocoanut butter, milk and cream manufacture and use	332	19–20, 22–23
Coffee substitutes, use of nuts	332	23
Cold storage, effect on fruit respiration	334	17
Colletotrichum trifolii, alfalfa stem disease, occurrence	339	42
Colorado, dry farming, advice to settlers	329	13–14
game laws, 1908	336	14, 30, 39, 44, 49
relating to deer	330	19
Plains region, grain and forage crops for hogs	334	21–22
Combustion, spontaneous of alfalfa hay, precaution	339	26
Compasses, use and cost	347	20
Condensed milk, consumption, Southern States	349	13, 14, 22
Connecticut, dairy farms, cropping systems	337	17–19
game laws, 1908	336	14, 30, 39, 44, 49
Conservation, natural resources, declaration of governors	340	1–7
problem	327	1–12
soil resources	342	5–10
Cooking vegetables, dried, tests	342	29–30
Coot. *See* Game laws, under the several States.		
Corn, dry rot, description, damage, and control	334	11–12
"hogging down," advantages, experiences of farmers, etc.	331	22–24
"hogging off," advantages	329	21–22
planting, time, advantages of check-row system, etc	326	10–11, 19, 21
silage, raising in New England	327	8, 23–24
with sorghum and cowpeas	334	10
sweet, growing on Maine dairy farm	337	10
Corrosive sublimate, preparation and use as disinfectant, objections	345	11–12
Cot, hog, improved, directions for making	334	31–32
Cotton boll weevil. *See* Boll weevil, cotton.		
breeding, wilt-resistant varieties, methods and results	333	14–15, 22–24
check-rowing, advantages	344	27, 45
crop, boll weevil damage, estimate	344	6–8
early, factor in boll weevil control, methods of procuring	344	23–28, 45–46
cultivation in boll weevil area, recommendations	334	23–36, 45–46
fields, boll weevil infested, fall treatment, location, etc.	344	18–23, 45
plant, wilt affected, appearance	333	7–8
plantation, worn-out, experiment in building up	326	1–22
planting, check-row system, advantages	326	9, 19, 21
time, relation to boll weevil control	344	26–27, 42–43, 46
products, boll weevil infested, quarantine	344	39–40

	Farmers' Bulletin No.	Page.
Cotton root-knot. *See* Root-knot, cotton.		
seed. *See* Seed, cotton.		
small-boll, advantages and disadvantages	344	25–26
sprout and volunteer, relation to boll weevil control	344	21, 43
topping, for boll weevil control, results	344	35
varieties, early, use in boll weevil control, list	344	25–26, 46
wilt-resistant, description	333	15–18
See Wilt, cotton.		
wilt-resistance	333	13–14
Cottontails, description, occurrence, habits, control, and food use	335	25–26
Cover crops, winter, value of rye and crimson clover	331	12, 13
Cowpea, iron, root-knot resistance	333	20, 21
thrasher, use, advantages	326	12, 21
Cowpeas, effect on worn-out cotton land	326	8–11
forage crop for hogs, value	331	14–15
pigs	334	20, 21
money value as farm crop	326	12–14, 21
relation, to prevalence of root-knot in the South	333	20
seed, quantity per acre	326	13–14
silage with corn and sorghum	334	10
Cows, dairy. *See* Dairy cows.		
profitable and unprofitable, determining	334	25–27
Coyote, description, habits and control	335	27–28
Crane. *See* Game laws, under the several States.		
Cream, cocoanut, manufacture and use	332	20
ice, southern cities, production, consumption, and price	349	12, 16
supply, Southern States	349	13, 15, 28, 34
Creameries, Southern States, butter production	349	7–8
Creamery butter, Southern States, production, consumption, and prices	349	7–8, 14, 15, 29
Cresol, origin, composition, and use as disinfectant	345	9–11
Cresolis compositus liquor, preparation and use as disinfectant	345	10–11
Cresylic acid, disinfecting power	345	9–10
Crop improvement by seed selection and plant breeding on the farm	334	5–9
nurse, use with alfalfa	339	16–17, 42, 43, 44, 45
rotation, factor in boll weevil control	344	23
for New England dairy farms	337	8, 11, 12, 13, 18, 20, 23, 24
hog pasture, Kansas and Oklahoma	331	17
influence on cotton wilt	333	13
suggestions for controlling root-knot	333	21
rotations, tobacco soils, systems	343	12–14
use of alfalfa	339	32–35
Cropping systems, New England dairy farms	337	1–24
Crops, dry farming, studies	329	11–14
forage. *See* Forage crops.		
New England dairy farm, rotation methods, etc	337	1–24
mismanagement	337	7–8
planting and harvesting, seed requirements, etc	337	22

	Farmers' Bulletin No.	Page.
Crowbar, use and cost	347	20
Cultivator, chain, for destroying boll weevils, description and use	344	29–34, 45
Cultures, pure, use in mushroom growing	342	26
Culverts, macadam road, size, location, construction, etc	338	15–16
Curing tobacco, air and fire methods	343	23–26
Curlew. *See* Game laws, under the several States.		
Cutting nippers, use	347	20
Cuttings, fig, setting, care, etc	342	22–23
willow, distribution from government experimental farm	341	32
setting, methods	341	13, 20–22, 44
Dairy butter, Southern States, production, consumption, and prices	349	8–9, 14, 15
cows, feed, value of alfalfa	339	29
New England, crops for feeding	337	21–22
ration, computation on energy value basis	346	19, 24–27
Southern States, feeding	349	17–18, 27–28, 32, 34–35
types kept, source of supply, and average milk production	349	24–25, 30–34
Division, work in the South	349	3–4
farms, New England, cropping systems	337	1–24
products, southern markets	349	7–16
Dairying, buttermilk, Southern States	349	27
southern, conditions	349	17–37
unprofitableness, causes	349	30–36
Dairymen, New England, cropping recommendations	337	22–24
Datura stramonium, planting as decoy for tobacco hornworm	343	19–20
Deer, diseases, experience of C. H. Roseberry	330	16
farming, history, possibilities, experiences, relation to game laws, etc	330	1–20
food requirements, forage, etc	330	15–17
laws, State, restrictive, character and modifications	330	18–20
See also Game laws, under the several States.		
species adapted for breeding purposes	330	7
Virginia, distribution, domestication, propagation experiments, etc	330	6, 13–18
white-tail, distribution, domestication, propagation experiments, etc	330	6, 13–18
wild, in private game preserves	330	17–18
Dehorner, description and use	350	8–9, 13
Dehorning cattle, directions, practices, etc	350	1–14
compounds, formula, for use on calves	350	14
instruments	350	8–10
Delaware, game laws, 1908	336	14, 30, 39, 44, 50
Diabetics, use of nuts	332	18, 22
Digestibility, nuts, study	332	14–18
Digestion, milk	348	16
Dillon cotton, description, and wilt-resistant qualities	333	15–16
Diplodia maydis, fungus causing dry rot of corn	334	11–12
Dipodomys spp., description, habits, and control	335	22–24

	Farmers' Bulletin No.	Page.
Disease, bone, of live stock, cause and remedy	329	24–26
corn, dry rot, description, damage, and control	334	11–12
dissemination through milk	348	20–21
hog, caused by pasturing on rape	331	13–14
turkey, blackhead, description and means of prevention	334	27–28
Diseases, alfalfa, and remedies	339	41–42
cotton, wilt and root knot, description, control, etc	333	1–24
deer, experience of C. H. Roseberry	330	16
fig	342	24
fox, rarity	328	17
live-stock, caused by deficiency of mineral elements in food	329	24–26
Disinfectants, common	345	1–12
Disking alfalfa	342	14–16
directions, etc	339	19–20, 39, 41, 48
Distillery slop, use as cow's feed, prohibitions	349	17, 24
District of Columbia, game laws, 1908	336	14–15, 44
Ditch, drainage, for fields, construction	326	18–19
Ditches, destruction by rodents	335	5, 8, 13, 23, 24, 29
Dividers, use and cost	347	20
Dixie cotton, description and wilt-resistant qualities	333	16–17
Dodder, eradication from alfalfa fields, suggestions	339	39–40
Dodge, L. G., bulletin on "Cropping systems for New England dairy farms"	337	1–24
Dogwood, red-twigged, growing on lawn	329	18
Dorset, M., bulletin on "Some common disinfectants"	345	1–12
Dove. *See* Game laws, under the several States.		
Drag chain, for destroying boll weevils, description and use	344	29–34, 45
Drainage, alfalfa soils, importance	339	8–9, 10, 44
basket willow holts, necessity	341	10, 11, 19, 31, 43
ditch, surface, for fields, construction	326	18–19
factor in obtaining early cotton crop	344	24
macadam roads, surface and subsurface	338	13–16
Drill press, description, cost, and directions for use	347	15–17
Drills, different types, description, use, and cost	347	15–17
Dry farming, conditions, possibilities, cultural methods, etc	329	10–15
Dry-land agriculture. *See* Dry farming.		
Duck. *See* Game laws, under the several States.		
Eelworm, root-knot, description, effect on cotton plant, etc	333	18–20
Elder, golden, use on lawn	329	19
Eleocharis tuberosa, description and use of nuts	332	10
Elk, feeding and pasturing	330	9–12
herds, Wyoming, size, range, protection, etc	330	8–9
preserve, cost of fencing and stocking	330	12–13
Rocky Mountain, occurrence, domestication, uses, habits, etc	330	7–13
See also Game laws, under the several States.		
Embankments, macadam roadside, care	338	21
Emulsifier, use in preparation of miscible oils	329	27
Energy values, feeding stuffs for farm animals	346	12–32
Ensilage. *See* Silage.		

	Farmers' Bulletin No.	Page.
Enzymes, presence in milk, effect	348	7, 16
Erosion, soil. *See* Soil erosion.		
Erysiphe trifolii, alfalfa leaf disease, appearance and remedy	339	41
Eutamias pictus, description, habits, etc	335	9–10
Evaporation, sweet potatoes, advantages	334	13–14
Evergreens, uses and culture	329	16–19
Experiment Station Work—XLVII	329	1–32
Export, game, laws, 1908	336	29–36, 49–55
Extractors, beeswax, directions for making and use	334	29–30
Factories, sweet-potato starch, suggestions	334	13–14
Farm animals. *See* Live stock.		
cotton, worn-out, experiment in building up	326	1–22
implements. *See* Implements, farm.		
management, energy value computations of rations	346	32
Farming, deer, in United States	330	1–20
dry. *See* Dry farming.		
fox. *See* Fox farming.		
New England, existing conditions	337	7–8
system for improvement of worn-out cotton lands	326	1–22
Farms, dairy, New England, cropping systems	337	1–24
Fat content of milk, method for ascertaining	334	26–27
nuts as source	332	12–13, 14, 16, 24–25
use and percentage in animal body	346	6, 11
Fattening beef cattle, value of alfalfa	339	29
farm animals, feed requirements	346	18–19
hogs, ration of grain and green feed	334	20–22
Fawn, management	330	16
Feed, dairy cow, cropping systems in New England	337	1–24
value of alfalfa	339	29
deer, requirements	330	16–17
elk, requirements	330	9, 10, 12
foxes, in confinement	328	13–14
green, for dairy cows in summer	337	16, 22
hog, grain and alfalfa, practices and results	331	7–9
with forage crops	334	20–22
value of alfalfa and grain ration	389	30
of peanuts, soy beans, and sugar beets with grain	331	15–18
horse, value of alfalfa	339	30–31
live stock, requirements in relation to energy value	346	16–20
poultry, alfalfa meal	339	26, 31
value, alfalfa and other forage crops	339	28–31
Feeding dairy cows, Southern States	349	17–18, 27–28, 32, 34–35
fox, daily ration, cost, etc	328	13–14
hogs, methods in Kansas and Oklahoma	331	8, 10, 16, 18, 19, 21–24
stuffs, composition, digestibility and feeding value, tables	339	28–29
energy value, etc	346	5–8, 12–15, 27–31
mineral content, importance and relation to soil	329	22–26
weed seeds, dissemination	334	18–19

	Farmers' Bulletin No.	Page.
Feeds, effect on flavor of milk	348	13, 14
Fence, elk inclosure, height, cost, etc	330	12
portable, use in "hogging down" corn	331	23
Fences, fox yard, construction	328	10–11
Fertilizer requirements of New England soils	337	15, 17, 18, 23
tomato	334	15
Fertilizers, alfalfa	339	9–10, 20, 34, 42, 43, 44, 45
fig	342	22
grades, comparison	329	5–6
influence on cotton wilt	333	12
sandy soils, with forage crop rotations	329	9–10
tobacco, kind and methods of application, etc	343	7, 15–16
use in obtaining early cotton crop	344	24–25, 46
Fertilizing basket willow holts	341	19, 22, 30, 31–32
Fever, typhoid, bacteria, dissemination through milk	348	20–21
Fiber zibethicus, damage to ditches, control, etc	335	12–13
Fig, culture, use, diseases, etc., South	342	19–26
trees, winter protection, methods	342	19–20
Figs, varieties for growing	342	24
Files, different types, use and cost	347	11, 14
Firing tobacco, practices	343	24–26
FLETCHER, AUSTIN B., bulletin on "Macadam roads"	338	1–39
Flooding willow holts, advantages, suggestions, etc	341	19, 22, 27, 30, 32
Florida, game laws, 1908	336	15, 30, 39, 44, 50
sorghum as silage crop	334	10–11
Flour, acorn, Indian method of preparing, use, etc	332	22
Flours, nut, use as food	332	21
Flowers, lawn, suggestions	329	19
Food, infant, use of milk of Canarium nuts	332	10, 20
use of nuts	332	1–28
Forage crop, South, use of sorghum	334	10–11
crops, composition, digestibility and feeding value, tables	339	28–29
for pigs	334	20–22
hog, in Kansas and Oklahoma	331	1–24
sandy soils	329	6–10
plants, deer park	330	15–16
Forest policies, declaration of governors	340	7
resources, conservation	327	1–12
Service, willow growing, experiments	341	32
Forge, farm, types, cost	347	14
Formaldehyde, forms, production, and use as disinfectant	345	5–8
Formalin gas, production and use as disinfectant	345	6–7
Fox, castration, effect	328	20
desert, description, occurrence, and food habits	335	27
diseases, rarity	328	17
farming, climatic restrictions	328	7–9
companies, failure, causes	328	18–19
profits	328	21–22
silver, history, instructions, difficulties, etc	328	1–22
food, daily ration	328	13–14
silver, breeding, history, instructions, experiments, etc	328	6–22
color phases and life zones	328	6–9
farming, history, instructions, difficulties, etc	328	1–22

	Farmers' Bulletin No.	Page.
Fox, skinning, directions	328	20–21
skins, preparation, value, market, etc	328	20–22
silver, color and prices	328	6–7, 21–22
yards, location, size, equipment, etc	328	9–13
"Frenching," cotton. *See* Wilt, cotton.		
Fruit, respiration, relation to temperature	334	17
trees, dry-farming districts	329	12
Fruitarian diet, nuts as factor	332	14–15, 17–18, 26, 28
Fuel, animal body, demand, source, utilization, etc	346	11–15
Fumigation, cotton seed, for boll weevil destruction, description of apparatus	344	36–38
Fungi, wilt, similarity	333	10
Fungicides, influence on cotton wilt	333	13
Fungus, cotton wilt, life history, spread, etc	333	8–11
dry rot of corn, habits, effect on plant, etc	334	11–12
Fur-bearing animals, propagation in confinement	328	5
Gallinule. *See* Game laws, under the several States.		
Game bagging, laws, 1908	336	7, 43–46
close seasons in United States and Canada, 1908	336	7, 12–27
export, State laws, 1908	336	29–36, 49–55
laws for 1908	336	1–55
new, 1908, United States and Canada	336	8–11
proposed but failing, 1908	336	11–12
State, in relation to deer farming	330	1–20
legislation, summary, 1908	336	5–8
packages, marking, laws, 1908	336	28–29
preserves, establishment, 1908	336	8
private, wild deer	330	17–18
sale, laws for United States and Canada, 1908	336	7, 36–42
shipment, laws, Federal, State, and Canadian, 1908	336	7, 27–36
transportation, laws, 1908	336	7, 27–36, 46–55
warden service, laws, 1908	336	8
Gardening, dry-farming districts, suggestions	329	13
Gas, formaldehyde, generation, use as disinfectant, etc	345	5–8
natural, waste	327	9
Georgia, game laws, 1908	336	8, 15, 30, 50
Germicides. *See* Disinfectants.		
Gimlet bits, use	347	9
Ginkgo nut, description and use as food	332	9
Glycogen, presence in animal body	346	6, 11
Goat, mountain. *See* Game laws, under the several States.		
Goose, wild. *See* Game laws, under the several States.		
Gophers, damage to alfalfa fields	339	40
pocket, description, habits, control, etc	335	19–21
Governors, declaration, for conservation of natural resources	340	1–7
Grading macadam roadbeds	338	11–13
tobacco, practices	343	26
Grain, poisoned, for rodents, directions for preparing	335	7
winter, seeding alfalfa fields, practice in Southwest	339	31–32

	Farmers' Bulletin No.	Page.
Grains, composition and energy value, per 100 pounds	346	7–8, 13–15
dry-farming districts	329	11–12
forage, for hogs, practices in Kansas and Oklahoma	331	10–12
Grass lands, manuring, in New England	337	12, 14, 15, 16, 17, 20, 23
New England, mismanagement	337	7–8
seed, quantity per acre on New England dairy farm	337	8, 9, 10, 12, 13, 14
Grasses, forage crops for hogs in Kansas and Oklahoma, use and value	331	16
mixing with alfalfa for pasture, practices	339	31
Grasshoppers, alfalfa fields, control	339	40–41
Great Basin, dry farming, conditions	329	14–15
Greenhouse tomato growing	334	16–17
Grimm alfalfa, introduction, and growth in Minnesota	339	37–38
Grindstones, types, use, and cost	347	20
Grounds, home, shrubs and trees	329	16–19
Grouse. *See* Game laws, under the several States.		
Gullies, field, elimination, methods, cost	342	6–8
Gutters, macadam road, grade, construction, etc	338	12–13, 15–16
Hammers, different types, use on farm	347	10, 12, 15
"Hardie," description and use	347	13
Hare. *See* Rabbit.		
Harness, repair, tools and supplies	347	21–22, 31–32
Harrowing alfalfa	339	48
	342	14–16
Harvesting alfalfa, hay and seed, directions	339	22–26, 36
corn, advantages from "hogging down"	331	22–24
crops, New England dairy farm	337	9–10, 11, 12, 13, 14, 15, 16, 18, 20–22
figs, suggestions	342	25
tobacco, time, method, etc	343	21–23
willow rods, time, method, etc	341	14–18, 23–27, 45
Hatchet, types	347	7
Hawaii, game laws, 1908	336	15
Hay, alfalfa, clover, and cowpea, composition, digestibility, and feeding value, tables	339	28–29
feed value	339	24, 28–31
feeding to hogs	334	22
value and practices	331	9–10, 22
harvesting, curing, stacking, etc	339	22–26
composition and energy values, per 100 pounds	346	7–8, 13–15
seeding and cutting, on New England dairy farms	337	8, 9, 10, 11, 12, 13, 14, 15, 16, 18, 20, 21, 22, 23, 24
Health, relation of milk supply	348	20–21
Heat, factor in boll weevil control	344	15, 27, 29, 34, 46
Hedge, evergreen, recommendations	329	19
Hedgerows, planting, to prevent soil drifting	342	9–10
Hen, mud. *See* Games laws, under the several States.		

	Farmers' Bulletin No.	Page.
Heterodera radicicola, root-knot nematode, description, effect on cotton plant, etc	333	18–20
worm, fig tree enemy, remedies suggested	342	24–25
Hibernation, cotton boll weevil	344	13–14, 22–23
HICKMAN, RICHARD W., bulletin on "The dehorning of cattle"	350	1–14
Hides. *See* Game laws, under the several States.		
Hog cot, improved, directions for making	334	31–32
feeding, supplements for grain	334	20–22
pasture, alfalfa, value, number per acre, cost per pound of gain, etc	331	6–10
"Hogging down" corn, advantages, and experiences of farmers	331	22–24
"Hogging off" corn, advantages, results of experiments	329	21–22
Hogs, disease, caused by pasturing on rape	331	13–14
fattening on standing corn, results of experiments	329	21
feeding, alfalfa and grain	339	30
methods in Kansas and Oklahoma	331	8, 10, 16, 18, 19, 20–24
forage crops, Kansas and Oklahoma	331	1–24
health, effect of "hogging down" corn	331	23–24
pasturing and feeding, practices in Kansas and Oklahoma	331	1–24
on alfalfa, practices, number per acre, etc	339	27, 30
raising, Kansas and Oklahoma, forage crops	331	1–24
on southern farm	326	21
Holt, basket willow, location, preparation, care, etc	341	11–15, 19–27, 44–45
Honey industry, West, relation to alfalfa culture	339	31
Hopperdozer, use in control of grasshoppers	339	41
Hordeum spp., alfalfa enemy in irrigated sections	339	38–39
Horns, calves, methods of preventing growth	350	13–14
removal. *See* Dehorning.		
Hornworm, tobacco, control, use of cobalt solution	343	19–20
Horse meat, food for fox	328	14
Horses, feed, protein and energy value, requirements	346	16–20
feeding, alfalfa	339	30–31
crimson clover, danger	331	13
market classes and grades, description	334	22–25
Houses, fox breeding	328	12
Hubbard squash. *See* Squash, Hubbard.		
HUBBARD, WILLIAM F., bulletin on "The basket willow"	341	1–45
Humboldt Valley, Nevada, mammals	335	1–31
Humus, sandy soils, method of increasing	329	7–8
soil, relation to development of nitrogen-fixing bacteria	326	16–17
HUNTER, W. D., bulletin on "The boll weevil problem"	344	1–46
Hunting licenses, details, and shipping regulations, 1908	336	7–8, 46–55
seasons in United States and Canada, 1908	336	7, 12–27
Hydrogen peroxid, use in sterilizing milk	348	24
Ibis. *See* Game laws, under the several States.		
Ice cream, southern cities, production, consumption, and price	349	12, 16
Idaho, game laws, 1908	336	15, 31, 39, 44, 50
Illinois, game law relating to deer	339	19
laws, 1908	336	15, 31, 39–40, 44, 50

	Farmers' Bulletin No.	Page.
Implement, seed selecting, use	334	9
separating, description	329	15–16
Implements, alfalfa, cultivating and harvesting	339	19, 23–24, 36
harrow	342	14–16
basket willow harvesting	341	15–18, 45
boll weevil control	344	29–34, 44–45, 46
dehorning	350	8–10
farm, care and repair	347	3–5
labor-saving, use	326	19
repair. *See* Tools.		
riveting, description, use, etc	347	12, 22
tobacco, setting, cultivating, and harvesting	343	16–19, 22–23
Indiana, game law, relating to deer	330	19
laws, 1908	336	15–16, 31, 40, 44, 50
Inoculation, soils, alfalfa, importance and methods	339	17–18, 34, 42, 43, 45, 48
Insect enemies, cotton boll weevil	344	15–16
Insecticide, tobacco pest, formula	343	12
use of miscible oils	329	26–28
Insects, alfalfa, control	339	40–41
attraction to lights, result of experiment	344	43–44
cotton, control, relation of boll weevil control	344	35–36, 38–39, 46
destruction by bats	335	31
injurious, basket willow, control	341	22–23
fig tree	342	24–25
scale. *See* Scale insects.		
tobacco, combating, methods	343	12, 19–20
Inspection, milk, southern cities	349	23–24
Iowa, game laws, 1908	336	16, 31, 40, 44, 50
Iron cowpea, root-knot resistance	333	20, 21
material for repairing farm equipment	347	29–31
working tools, for repair work on farm, descriptive list	347	12–19
Irrigation, alfalfa, methods practiced	339	45–46
willow holts, advantages, suggestions, etc	341	19, 22, 27, 30, 32
Jack rabbit, black-tailed, description, occurrence, habits, and control	335	24–25
JAFFA, M. E., bulletin on "Nuts and their uses as food"	332	1–28
Japanese millet, growing for dairy cows	337	18, 22, 24
Jelly making, use of cane and beet sugar, comparison	329	30–32
Jimson weed, planting as decoy for tobacco horn-worm moth	343	19–20
Kansas, forage crops for hogs	331	1–24
game laws, 1908	336	16, 31, 40, 44, 50
Kellner's nutrition investigations	346	14–15, 19, 20
Kentucky blue-grass region, advantages in stock feeding	329	24
game laws, 1908	336	8, 16, 31, 40, 44, 50
tobacco cultivation	343	1–28
Ketchup, mushroom, recipe	342	28
Kitchen, model, description, arrangement of furniture, etc	342	31–32
Knife, drawing, description and cost	347	8
Koumiss, definition and use	348	19

	Farmers' Bulletin No.	Page.
Labor, basket-making, problem	341	38
macadam road building	338	10–11
New England dairy farm, solution of problem	337	21
saving machinery, profitable use on farm	326	19, 22
Lactic-acid bacteria, effect on milk	348	14–15
LANTZ, D. E., bulletin on "Deer farming in the United States"	330	1–20
Lawns, trees, evergreen and deciduous	329	16–19
Laws, game. *See* Game laws.		
Lead, arsenate, boll weevil poisoning, experiments	344	41
use in control of tobacco insects in seed bed	343	12
Leaf rust, alfalfa, description and remedy	339	41
spot, alfalfa, various forms, appearance and control	339	41–42
worm, cotton, relation to boll weevil control	344	35–36, 46
Leather, supply for harness repair	347	31
Legislation, game, summary, 1908	336	5–8
Legumes, dry-farm crop	329	12
growing on worn-out soils, value, causes of failure, etc.	326	6–17, 21
sandy soils	329	6–10
Lepus spp., description, habits, control, etc	335	24–26
Level, spirit, description, usefulness, and cost	347	11–12
Licenses, hunting and shipping of game, United States and Canada, 1908	336	7–8, 45–55
Lichi nut, Chinese, use	332	9
"Lick," cattle, recommendations	329	25–26
Life zones of silver fox	328	8–9
Lime, chlorid, preparation and use as disinfectant	345	11
feeding stuffs, requirements	329	22–26
sandy soil, requirements	329	9
Liming soils for alfalfa growing	339	6, 10–11, 20, 34, 42, 43, 44
clover culture in New England	337	23
Live stock, bloat, tapping and other remedies	339	27, 31
bone disease, cause and remedy	329	24–26
feed requirements for maintenance, growth, fattening, etc., in relation to energy value	346	16–20
feeding, importance of lime and other mineral matter	329	22–26
pasturing on alfalfa, danger of bloating and remedies	339	20, 27, 29, 31
raising on southern farm	326	20–21
Long Island, game laws, 1908	336	20
Louisiana, game laws, 1908	336	8, 16, 31, 40, 44, 50
Loxostege commixtalis, control in alfalfa field	339	41
Lucern, sand, growth in Northern States	339	37
See also Alfalfa.		
Lynx baileyi, description, occurrence, habits, etc	335	26
Macadam, definition of term	338	5
road, sides, care	338	21–22, 25
roads, construction, maintenance, and cost	338	1–39
machinery, labor, and teams	338	8–11
maintenance, methods and suggestions	338	25–27

	Farmers' Bulletin No.	Page.
Macadam, roads, Massachusetts and New Jersey, details	338	8, 18–19, 22–23, 25–26, 28–39
material, local and imported, average cost	338	23–24
Macadamized roads. *See* Macadam roads.		
Machinery, farm, care and repair	347	3–5
labor-saving, use	326	19, 22
hay-making	339	23–24
road-building	338	8–10
Machines, nut-cracking, general description	332	27
Macrosporium sarcinæforme, alfalfa leaf disease, appearance and control	339	41
MAHAN, C. A., et al., bulletin on "The cultivation of tobacco in Kentucky and Tennessee"	343	1–28
Maine, dairy farms, cropping systems	337	8–10
game laws, 1908	336	16–17, 31, 40, 44, 50
Mammals, harmful and beneficial, of the arid interior	335	1–31
Manure, barnyard, effect on quality of tobacco	343	16
use on alfalfa soil	339	9, 20, 34, 42, 43, 44
grass lands, quantity and methods of application	337	12, 14, 15, 16, 17, 20, 23
green crops for alfalfa field	339	9
stable, effect on cotton wilt	333	12
weed seeds, vitality	334	18
Map, boll weevil infested area of United States	344	7
Mares, brood, for raising mules in South	326	20
Market, fox-skin	328	21–22
horses and mules, classes and grades	334	22–25
willow, basket and rod	341	7–8, 31, 35–42, 45
Marketing butter, methods, Southern States	349	8, 9, 35
figs, difficulties	342	20–21, 25
game, laws, 1908	336	7, 27–42
milk, methods, Southern States	349	19–22, 25, 31
nuts	332	26–28
tobacco, practices	343	26–28
venison, conditions	330	5, 11, 13, 19, 20
Markets, southern, for dairy products	349	7–16
tobacco, European, demands	343	27–28
Maryland, basket-willow growing, cost, conditions, etc	341	30, 31, 34, 39
game laws, 1908	336	8–9, 17, 31–32, 40, 44, 51
nut growing	329	19–21
Massachusetts, dairy farms, cropping systems	337	15–17
game laws, 1908	336	9–17, 32, 40, 44, 51
relating to deer	330	19
macadam roads, construction, maintenance, cost, etc., details	338	8, 18–19, 22–23, 25–26, 28–39
Matrix, stone, use on macadam road surface	338	18–19, 20–21
Maul, directions for making	347	20

	Farmers' Bulletin No.	Page.
Meal, alfalfa, manufacture, advantages of using, etc	339	26
bone, use in stock feed	329	25–26
Meals, nut oil-cake, utilization	332	25
nut, use as food	332	21–22
Meat, horse, food for foxes	328	14
Melons, stock, growing in dry-farming districts	329	14
Mephitis major, description, food habits, etc	335	28
Mercury, bichlorid, preparation and use as disinfectant, objections	345	11–12
Mice, cliff, description and habits	335	15
harvest, description, habits, and control	335	15–16
house, habits and control	335	16–17
kangaroo, description and habits	335	21–22
meadow, description, habits, control, etc	335	10–12
pocket, description, habits, and control	335	21
short-tailed grasshopper, occurrence, description, and habits	335	13–14
Sonoran white-footed, description, habits, and control	335	14–15
varieties, description, habits, control, etc	335	10–17, 21–22
white-footed, varieties, description, habits, etc	335	14–15
Michigan, game laws, 1908	336	17, 32, 40, 44, 51
Microdipodops pallidus, description and habits	335	21–22
Microtus montanus, description, habits, control, etc	335	10–12
Middle Atlantic States, alfalfa growing, instructions	339	43–44
Migration, cotton boll weevil	334	16–17
Mildew, alfalfa, description	339	41
Milk, alcoholic fermentation	348	19
bacterial contamination, sources	348	11–13
bitter, caused by bacteria, remedies suggested	348	17–18
changes caused by bacteria, study	348	1–24
composition and characteristics	348	7
condensed, consumption, Southern States	349	13, 14, 22
consumption, Southern States	349	14, 28
cooling, methods	348	22
southern dairies	349	18, 21, 25
cost of production, Southern States	349	24–26, 27–33, 37
disease bacteria, dissemination	348	20–21
flavors, causes	348	13–14
handling, care	348	12, 15, 21–24
insanitary handling, Southern States	349	18–21, 36, 37
relation to health	348	20–21
inspection, southern cities	349	23–24
marketing, methods, Southern States	349	19–22, 25, 31
nut, uses as food	332	10, 20, 23
preserving, processes, etc	348	10–11, 15, 22–24
prices, southern cities	349	15, 16, 21–22, 36
production, feeding stuffs, energy value, study	346	19, 24–30
records, directions for keeping	334	26–27
ropy, cause, occurrence, remedy, etc	348	18–19
souring, cause	348	14–15
supply, southern cities, production, care, distribution, inspection, etc	349	17–28
sweet, curdling and digestion	348	15–16

	Farmers' Bulletin No.	Page.
Millet, Japanese, growing for dairy cows	337	18, 22, 24
Millets, dry-farm crop	329	12
Mineral, feeding stuffs, requirements	329	22–26
matter, nuts as source	332	12–13
Minerals, exhaustion of supply, cause	327	9
Mink, occurrence in arid region	335	30
Minnesota, game law relating to deer, elk, etc	330	19
laws, 1908	336	18, 32, 40, 44, 51
Mississippi, alfalfa growing, method	339	44
game laws, 1908	336	9, 18, 32, 40, 44, 51
Missouri, game law relating to deer, elk, etc	330	19
laws, 1908	336	18, 32, 40, 44, 51
Miter box, construction and use	347	24
Montana, game laws, 1908	336	18, 32, 40, 44, 51
Montreal muskmelon industry	342	16–18
Moose. *See* Game laws, under the several States.		
Mouse. *See* Mice.		
Mulch, use in reclaiming washed lands	342	6–7
Mules, market classes and grades, description	334	24, 25
raising on southern farm, result of experiment	326	20
Mus spp., habits and control	335	16–17
Mushroom growing, use of pure cultures	342	26
powder, preparation and use	342	28
Mushrooms, wild, nonpoisonous, utilization, ways of preparing, etc	342	27–29
Muskmelon industry, Montreal, cultural methods of growers	342	16–18
Muskrat, damage to ditches, control, etc	335	12–13
Nails, use in farm equipment repairs, sizes and cost	347	31
Natural resources, conservation	327	1–12
Nebraska, game laws, 1908	336	18, 32, 40, 44, 52
Nematode, fig tree enemy, remedies suggested	342	24–25
root-knot, description, effect on cotton plant, etc	333	18–20
Neotoma desertorum, description, habits, control, etc	335	18
Nevada, Carson and Humboldt valleys, mammals	335	1–31
game laws, 1908	336	18, 32, 40, 44, 52
New England, alfalfa growing, instructions	339	42–43
crops. *See* Crops, New England.		
dairy farms, cropping systems	337	1–24
seed planting and harvesting, seed requirements, etc	337	22
New Hampshire, dairy farms, cropping systems	337	10–12
game law relating to deer	330	19
laws, 1908	336	18–19, 32, 40, 44, 52
planting and harvesting, seed requirements, etc	337	22
New Jersey, game laws, 1908	336	9, 19, 33, 40, 45, 52
macadam roads, cost	338	22–23, 35–36
sandy soils, improvement, recommendations	329	7–8
New Mexico, dry farming, study by J. J. Vernon	329	10–13
game laws, 1908	336	19, 33, 40, 45, 52

	Farmers' Bulletin No.	Page.
New York, alfalfa growing, instructions	339	42–43
basket-willow industry	341	11, 31, 40–42
game law relating to deer, elk, etc	330	20
laws, 1908	336	9, 19–20, 33, 41, 45, 52
Nitrogen-fixing bacteria. *See* Bacteria, nitrogen-fixing.		
North Carolina, game law relating to deer	330	20
laws, 1908	336	9, 20, 33, 45, 52
North Central States, alfalfa growing, instructions	339	45
Dakota, game laws, 1908	336	20, 33, 41, 45, 52
Nougat, origin, manufacture, and use as confection	332	23
Nut products, description, adulteration, use, etc	332	8, 17, 18–25
statistics and market conditions, 1905	332	7–8
Nutrition investigations, feeding stuffs	346	12, 14
Nuts, description, flavor, composition, digestibility, etc	332	8–18
food uses	332	1–28
green, use as food	332	24
growing in Maryland	329	19–21
marketing	332	26–28
polishing, bleaching, cracking, marketing, etc	332	26–28
value in diet	332	16–18, 22, 25–26, 28
Oats, breeding, directions	334	8
forage crop for hogs	331	11
Odocoileus virginianus, distribution, domestication, propagation experiments, etc	330	6, 13–18
Ohio, alfalfa growing, instructions	339	44–45
game laws, 1908	336	9–10, 20, 33, 41, 45, 52
Oil-cake meals, nut, utilization	332	25
can, description, use, and cost	347	21
Oils, emulsifying, method	329	27–28
lubricating, for farm use	347	32
miscible, preparation and use against scale insects	329	26–28
nut, uses and value as food	332	24
Oilstone, use and cost	347	20–21
Oklahoma, forage crops for hogs	331	1–24
game laws, 1908	336	10, 20, 33, 41, 45, 52
Oldys, Henry, and T. S. Palmer, bulletin on "Game laws for 1908"	336	1–55
Oleomargarin, Southern States, production, consumption, and prices	349	10, 14, 16, 29
Olives, Chinese, use of pits	332	10
Onychomys brevicaudus, occurrence, description, and habits	335	13–14
Orchards, destruction by rodents	335	20, 25–26
Oregon, game laws, 1908	336	20–21, 33, 41, 45, 52
Orton, W. A., bulletin on "Cotton wilt"	333	1–24
Osgood, Wilfred H., bulletin on "Silver fox farming"	328	1–22
Otter, occurrence in arid region	335	30
Ozark regions, venison production, possibilities	330	10–11
Ozonium omnivorum, alfalfa disease, occurrence and control	339	41

	Farmers' Bulletin No.	Page.
Packing tobacco for market, practices	343	26–27
Paints, use in repairing farm equipment	347	4, 32
PALMER, T. S., and HENRY OLDYS, bulletin on "Game laws for 1908"	336	1–55
Paraform, production of formaldehyde	345	7
Parasites, cotton boll weevil	344	15–16, 35, 46
Paris green, application to tobacco, methods and suggestions	343	19
Partridge. *See* Game laws, under the several States.		
Pasteurization, milk, methods, effect, etc	348	23
Pasture, alfalfa, management	339	27, 31, 48
crops, hog, Kansas and Oklahoma	331	6–20
hog, crops	334	20–22
Pastures, Southern States	349	35
Pasturing, elk and deer	330	11–12, 14, 17
hogs, crops used in Kansas and Oklahoma	331	1–24
PAYNE, J. E., advice to settlers in Colorado dry-farming districts	329	13–14
Peanut butter, manufacture and use	332	19
Peanuts, forage crop for hogs	331	17–18
use and value as food	332	11, 12, 13, 18, 19, 25–26, 28
Peas, Canadian field, forage crop for hogs	331	15
Pecans, varieties suited to Maryland	329	20
Pelts. *See* Skins.		
Pen, chute, construction	350	12
Pennsylvania, game law relating to deer	330	20
laws, 1908	336	21, 33, 41, 45, 52
PENNY, C. L., method for emulsifying oils	329	27
Permanganate, use in liberating formaldehyde gas, directions	345	7
Perodipus spp., description, habits, and control	335	22–23
Perognathus spp., description, habits, and control	335	21
Peromyscus sonoriensis, description, habits, and control	335	14–15
Peronospora trifolii, alfalfa leaf disease, appearance and remedy	339	41
Peruvian alfalfa, characteristics	339	38
Pheasants. *See* Game laws, under the several States.		
Phenol, use as disinfectant, advantages and disadvantages	345	8–9
Pickles, green nut, process of making, and use as food	332	24
Pigeon, wild. *See* Game laws, under the several States.		
Pigs, fall, raising, experiences of Oklahoma farmers	331	21–22
fattening, ration of grain and green feed	334	20–22
pasturing on wheat, danger	331	10–11
Pinch bar, use and cost	347	20
PINCHOT, GIFFORD, bulletin on "The conservation of natural resources"	327	1–12
Pine nuts, use as food	332	9, 13
Piñon, use as food	332	9
Pinte ground squirrel, description, control, etc	335	6–8
Pipes, open end, use in surface drainage of roads, disadvantages	338	16
Pistache nut, description and use	332	9, 13
Planes, description, use, and cost	347	10
Plant breeding on the farm	334	5–9
Plantation. *See* Farm.		
Plants susceptible to root-knot	333	19, 21

	Farmers' Bulletin No.	Page.
Pliers, use on farm, and cost	347	20
Plover. *See* Game laws, under the several States.		
Plumbing, tools, use on farm, cost, etc	347	18–19
Pocket gophers. *See* Gophers.		
Poisoning, boll weevil, experiments, results	344	40–42
rodents	335	7–8, 12, 13, 15, 17, 20, 23, 25
Pork production, Oklahoma and Kansas, forage practices	331	1–24
Potash, caustic, use in dehorning calves	350	14
use as tobacco fertilizer	343	16
Potato breeding, seed selection, etc	342	10–14
crop, rank, importance, average yield per acre, etc	342	10
Potatoes, alfalfa rotation	339	34
sweet. *See* Sweet potatoes.		
use in dairy farm crop rotation in New England	337	23–24
Poultry, disease, blackhead of turkeys	334	27–28
feed, alfalfa meal	339	26, 31
protection against skunks and other animals	335	28
Preserve, elk, cost of fencing, stocking, etc	330	12–13
Preserves, deer, private, success	330	17–18
game, establishment, 1908	336	8
nut, use as food	332	20–21
Preserving, milk, processes, etc	348	10–11, 15, 22–24
mushrooms, wild	342	27–29
Press, cheese, automatic, description and advantages	329	28–29
Propagation, fig, by cuttings	342	22–23
Protein, animal body, necessity, source, utilization, digestibility, etc	346	5–7, 10–20
nuts as source	332	12–16, 18, 25–26, 28
Pruning fig trees	342	23–24
tomato vines, directions and effect	334	15–16
Pseudopezia medicaginis, alfalfa leaf disease, appearance and remedy	339	41
Ptarmigan. *See* Game laws, under the several States.		
Ptomaine poisoning, buttermilk	349	27
Ptychodes vittatus, damage to fig trees in Louisiana	342	25
Pumpkins, hog feed, value	331	18
Punches, different types, use and cost	347	13, 21–22
Putorius arizonensis, description and beneficial habits	335	30
Quail. *See* Game laws, under the several States.		
Quarantine, boll weevil, necessity of enforcement	344	39–40
QUINN, C. E., bulletin on "Forage crops for hogs in Kansas and Oklahoma"	331	1–24
Rabbit. *See* Game laws, under the several States.		
Rabbits, arid regions, description, habits, and use as food	335	24–26
Rail. *See* Game laws, under the several States.		
Rainfall, Great Basin, dry-farming district	329	14
Range, dehorning practices	350	11–13
Rape, feeding to hogs	334	20, 22
forage crop for hogs, methods of culture, value, etc	331	13–14

	Farmers' Bulletin No.	Page.
Rape, hog forage	329	22
seed, quantity per acre, and method of sowing	331	13
Rasps, types, use and cost	347	11, 14
Ration, hog, value of alfalfa hay	339	30
See also Feed.		
Rations, farm animals, computation by use of energy values	346	1–32
dry matter	346	15, 20
Rats, varieties, description, habits, control, etc	335	17–18, 22–24
Rattan, use in basket and furniture making	341	35
RAWL, B. H., article on "Why dairying is undeveloped in the South"	349	29–37
Records, milk and butter, directions for keeping	334	26–27
Red clover. *See* Clover, red.		
Reithrodontomys megalotis deserti, description, habits, and control	335	16
Renovated butter, southern cities, production, consumption, and prices	349	9, 14, 15, 29
Respiration, fruit, relation to temperature	334	17
Rhode Island dairy farms, cropping systems	337	17
game laws, 1908	336	10, 21–22, 33, 41, 45, 52
Rivers, water-power waste and possibility of utilization	327	10
Riveting implements, description and use	347	12, 22
Rivets, use in farm-equipment repairs	347	30, 31
Road, macadam, sides, care	338	21–22, 25
Roadbed, macadam, preparation, material, etc	338	6, 11–21
Road-building material, kind, quality, weight, cost, etc	338	6–8, 23–24
outfits for building macadam roads	338	8–11
Roads, macadam. *See* Macadam roads.		
Robins. *See* Game laws, under the several States.		
Rock, road-building, kind, quality, weight, etc	338	6–8, 17
trap, use in road building	338	6, 8, 25, 33, 34
Rodents injurious to alfalfa, and methods of destroying	339	40
poisoning	335	7–8, 12, 13, 15, 17, 20, 23, 25
ROGERS, L. A., bulletin on "Bacteria in milk"	348	1–24
Roguing, cotton, directions	333	23
Rollers, steam, for macadam roads, cost, operating, etc	338	10, 20, 21
Root crops for hogs, Kansas and Oklahoma	331	16–18
Root-knot, cotton, description, prevalence, control, etc	333	18–21
fig-tree enemy, remedies suggested	342	24–25
Root-rot, alfalfa, occurrence and control	339	41
Rot, dry, of corn, description, damage, and control	334	11–12
Rotation, crop. *See* Crop rotation.		
Rotations, alfalfa, long and short	339	32–35
Rule, plumb, use and suggestions for making	347	11
Rules, folding, use, size, and cost	347	11
"Running" tobacco, definition of term and extent of practice	343	25
Rye, forage crop for hogs	331	11–12
growing for dairy cows in New England	337	16, 18, 22
Salix. *See* Willow, basket.		
Salt "lick" for cattle, necessity	329	26

	Farmers' Bulletin No.	Page.
SANBORN, J. W., dairy farm improvement, demonstration	337	10–11
Sandpiper. *See* Game laws, under the several States.		
Sandy soils. *See* Soils, sandy.		
San Luis Valley, Colorado, hog industry	331	15
Sawfly, willow-shoot, control	341	22
Sawhorses, description, use, and cost	347	23–24
Saws, different types, description, use, and cost	347	7–8, 18
sharpening, outfit, directions for use	347	7–8
Scale insects, spraying with miscible oils	329	27–28
SCHERFFIUS, W. H., et al., bulletin on "The cultivation of tobacco in Kentucky and Tennessee"	343	1–28
Sclerotium, alfalfa, disease	339	41
SCOFIELD, C. S., summary of report on dry farming in Great Basin	329	14–15
Screenings, stone, use on macadam road surface	338	18–19, 20–21
Screw-drivers, description and cost	347	9
Screw plate, description and cost	347	18
Screws, use in farm-equipment repairs, sizes and cost	347	30
Sea-island cotton, wilt-resistant strains	333	17
Seed, alfalfa, production	339	35–36
quantity per acre	339	16, 42, 43, 44, 45, 47, 48
selection and testing	339	13
bed, alfalfa, preparation	339	12, 34, 42, 43, 44, 45, 46, 47, 48
tobacco, location, preparation, care, etc	343	7–12
cotton, chemical treatment for boll weevil control, fallacy	344	44
fumigation for boll weevil control	344	36–38
heavy, advantage of planting	344	26
plat, treatment for boll weevil control	344	46
wilt-resistant varieties, distribution by Department of Agriculture	333	24
cowpeas, quantity per acre	326	13–14
grass and clover, quantity per acre on New England dairy farm	337	8, 9, 10, 12, 13, 14, 22
legume, testing, necessity and method	326	17–18
potatoes, selection, method, result of experiments	342	10–14
rape, quantity per acre, cost, etc	331	13
requirements on New England dairy farm, and dates of planting and harvesting	337	22
selection and separation	329	15–16
in wheat breeding	334	6–9
separation, devices, description	329	15–16
tester, home made	339	13
tobacco, grading, sowing, etc., methods	343	10
pollination, precautions	343	20–21
wheat, quality	334	9
Seeding alfalfa fields, practices	339	11, 13–17, 31–32, 42, 43, 44, 45, 46, 47, 48

	Farmers Bulletin No.	Page.
Seeding hay crops on New England dairy farms	337	8, 9, 10, 12, 13–14, 15, 16, 18, 20
Seeds, weed. *See* Weed seeds.		
Selection, mass, in cotton breeding, faults of method	333	14, 22
seed. *See* Seed selection.		
Semiarid regions, alfalfa growing, instructions	339	37, 38, 47
Shears, tinners', use, size, and cost	347	19
Sheep, bloat, tapping and other remedies	339	27
destruction by bobcats and coyotes and protection	335	26, 27–28
feed, protein and energy value, requirements	346	16–20
feeding alfalfa, practices and value	339	29–30
mountain. *See* Game laws, under the several States.		
pasturing on alfalfa, danger, etc	339	20, 27, 29–30
Shipment, game, Federal laws, 1908	336	27–28
laws, State and Canadian, 1908	336	7, 28–36
Shrubs, lawn	329	18–19
Silage, alfalfa, suggestions	339	26
mixtures	334	10
sorghum, value and cost	334	9–11
value as feed for dairy cows in New England	337	10, 23
Silver fox. *See* Fox, silver.		
Sirups, nut, manufacture and use	332	20
Skins, fox. *See* Fox skins.		
fur-bearing animals, value and influence of climate	328	8–9
See also Game laws, under the several States.		
Skunks, species, description, habits, etc	335	28–29
"Slumgum," wax content and extraction	334	30
Snipe. *See* Game laws, under the several States.		
Snow, dry-farming districts, suggestions for retaining on land	329	12–13
Soap solution for emulsifying oils, preparation	329	27
Soda, caustic, use in dehorning calves	350	14
Soil, alfalfa growing, requirements, notes	339	6, 8–12, 17–18, 42–48
basket willow	341	9–11, 13–14, 19, 31–32, 33, 34, 44
conditions, influence on cotton wilt	333	11–12
root-knot	333	19
drifting, prevention	342	8–10
effect of alfalfa	339	32
erosion, prevention, national problem	327	9
fig-tree requirements	342	22
improvement by nitrogen-fixing bacteria	326	16–17
inoculation, alfalfa fields, recommendations and practices	339	17–18, 34, 42, 43, 45, 48
resources, conservation	342	5–10
waste	327	9
root-knot infected, treatment	333	21
tobacco, selecting, breaking, fertilizing, preparing, etc	343	12–18
washing, prevention	342	6–8
water-holding power, increasing	342	9
worn-out, effect of leguminous crops	326	6–12, 21

	Farmers' Bulletin No.	Page.
Soiling crop, use of alfalfa	339	26–27
Soils, liming, for alfalfa growing	339	6, 10–11, 20, 34, 42, 43, 44
sandy, alfalfa growing	339	12, 34–35
improvement by growing forage crops	329	6–10
tomato	334	15
Soldering irons, directions for use and cost	347	18
Sorghum, forage crop for hogs in Kansas and Oklahoma	331	14
silage, value and cost	334	9–11
Sorghums, dry-farm crop	329	12
Souring, milk, cause	348	14–15
South Carolina, game laws, 1908	336	10, 22, 33, 41, 45, 52
dairy industry	349	1–37
Dakota, game laws, 1908	336	22, 33, 41, 45, 53
winter crops, purpose and success in growing	326	14–15
Southern farm, live-stock raising	326	20–21
States, alfalfa growing, instructions	339	43–44
Sows, brood, feeding on alfalfa hay	331	9, 22
Soy bean, forage crop for hogs, value	331	15–16
use in nut products	332	8
Spawn, mushroom, different kinds	342	26
Spilogale saxatilis, description and habits	335	28–29
Spokeshave, use and cost	347	11
Spraying cotton for boll-weevil control, difficulties	344	41, 44
tobacco seed bed for insect control	343	12
with carbolic acid solutions, directions	345	9
formalin, directions	345	6
Spruce, Colorado blue, description and use	329	18
Squares, carpenters' sizes and cost	347	8
Squash, Hubbard, feeding to hogs	334	22
storage experiments	342	18–19
Squirrel. *See* Game laws, under the several States.		
Squirrels, ground, description, control, etc	335	6–10
Staple puller, directions for making and using	347	21
Staples, supply for farm equipment repairs, sizes	347	31
Starch, sweet potato, manufacture, investigations	334	12–14
Sterilization, milk, processes, effect, etc	348	23–24
tobacco seed beds, use of burners and steam heat	343	7–9
Stock. *See* Live stock.		
Stone-crushing outfits, cost, directions for operating, etc	338	8–10, 11, 17
Stone, local and imported, for macadam roads, average cost	338	23–24
See also Rock.		
Storage, cold. *See* Cold storage.		
squash, Hubbard, experiments	342	18–19
Stripping tobacco, practices	343	26
STUART, DUNCAN, article on "Southern markets for dairy products"	349	7–16
et al., bulletin on "The dairy industry in the South"	349	1–37
Suckers, tobacco, removing	343	19

	Farmers' Bulletin No.	Page.
Sugar, beet, use in canning and jelly making	329	30–32
beets, forage crop for hogs, value	331	15–16
cane, use in canning and jelly making	329	30–32
Sunflower seed, food use	332	11
Swan. *See* Game laws, under the several States.		
Sweating, tobacco, cause, effect, and remedy	343	24–25, 27
Sweet potatoes, evaporation, advantages	334	13–14
starch manufacture investigations	334	12–14
Tabebuia nut, description, and use as food	332	10–11
"Tailings," disposition by crusher	338	17
Tar, use on macadam roads	338	27
Taxidea americana, occurrence, food habits, etc	335	29
Telfairia pedata, or tabebuia, description and use as food	332	10–11
Telford foundations for macadam roads, directions for making	338	14–15
Temperature, effect on keeping quality of apples	334	17
Tennessee, game laws, 1908	336	22, 34, 41, 45, 53
tobacco cultivation	343	1–28
Terracing, field lands, systems, cost	342	7–8
Testing seed, germination	326	17–18
Texas, boll weevil damage to cotton crop	344	6, 8
fig industry	342	21
game laws, 1908	336	22, 34, 41, 45, 53
Therm, unit of energy value, use	346	12–13
Thermophores, use in preserving milk	348	22
Thomomys spp., description, habits, control, etc	335	19–21
Thread-cutting outfits, for bolts, description and cost	347	18
Timber supply, exhaustion, danger	327	8
Tinners' snips, use, size, and cost	347	19
Tobacco, Burley. *See* Burley tobacco.		
cultivation, practices, Kentucky and Tennessee	343	5–20
dark, district, market utilization, etc	346	6, 27
export, qualities required in different markets	343	27–28
harvesting, curing, packing, marketing, etc., practices in Kentucky and Tennessee	343	21–28
seed-bed burner, description and use	343	8
location, preparation, care, etc	343	7–12
grading, sowing, etc., methods	343	10
plants, selection, handling, etc	343	20–21
setter, advantages of use	343	17
soil, selecting, breaking, fertilizing, preparing, etc	343	12–18
sweating, cause, effect, and remedy	343	24–25, 27
transplanting, methods and practices	343	17
Tomatoes, canning, development of industry	334	14
field and hothouse, profits, cultural notes, etc	334	14–17
Tongs, blacksmiths', size and cost	347	15
Tool outfits, for farm use, combinations suggested, with cost	347	24–25
Tools, carpenter, for farm use, descriptive list, cost, etc	347	6–12
farm repair, descriptive lists, cost, care, etc	347	5–32
harness-repair, descriptive list	347	21–22
iron-working, for repair work on farm, descriptive list	347	12–19
plumbing, for use on farm, cost	347	18–19
purchase and use, suggestions	347	24–26, 32

	Farmers' Bulletin No.	Page.
Tools, road-building	338	8–10
sharpening, suggestions and directions	347	7–8, 9, 16, 20–21
use, educational value	347	5
wood-working, for repair work on farm, descriptive list	347	6–12
Topping cotton for boll weevil control, results	344	35
tobacco, practices and results	343	18–19
Transportation, deer, state laws	330	18–20
game, federal and state laws, 1908	336	7, 27–36
Trapa bispinosa, description and use of nut	332	9–10
Trapping boll weevils, experiments and results	344	43
muskrats, directions	335	13
Trees, evergreen and deciduous, use on lawn	329	16–19
planting along macadam road side	338	21–22
shade, dry-farming area	329	12
Tuberculosis, danger of infection through milk	348	20
Turkestan alfalfa, introduction and adaptability	339	37
Turkeys, blackhead, prevalence and means of prevention	334	27–28
wild. *See* Game laws, under the several States.		
Uromyces trifolii, alfalfa leaf disease, description and remedy	339	41
Utah, alfalfa irrigation experiments	339	46
dry farming, conditions	329	14–15
game laws, 1908	336	22–23, 34, 41, 45, 53
Vegetables, cooking tests	342	29–30
dry-farming area	329	12
Venison, composition, quality, and food value	330	5–6, 9
market conditions	330	5, 11, 13, 19, 20
production in United States, history, possibilities, etc.	330	1–20
Ventilation, tobacco barns	343	23–24
Vermont, dairy farms, cropping systems	337	12–15
game laws, 1908	336	23, 34, 41, 45, 53
VERNON, J. J., study of dry farming in New Mexico	339	10–13
Vetch and wheat mixture, feed for dairy cows	337	16, 22
hairy, use in crop rotation in tobacco districts	343	14
Vicia villosa, use in crop rotation in tobacco districts	343	14
Virginia, game laws, 1908	336	10, 23, 34, 41–42, 53
Vise, anvil, and drill, combination tool, use and cost	347	15
types, use on farm, and cost	347	15, 19–20
Vulpes fulvus. *See* Fox, silver.		
macrotis, description, occurrence, and food habits	335	27
WALKER, JO. M., improvement of worn-out cotton plantation	326	1–22
Walnut crop, California, 1905	332	7
Walnuts, green, use in pickle making	332	24
Persian, varieties suited to Maryland	329	20
Wapiti. *See* Elk; Game laws, under the several States.		
Warden, game, service, laws, 1908	336	8
Washington, game laws, 1908	336	23–24, 34, 42, 45, 53
Water, percentage in animal body	346	5, 6
power, utilization and control, problem	327	10–11

	Farmers' Bulletin No.	Page.
Waterfowl. *See* Game laws, under the several States.		
Watering carts, use in building macadam roads	338	10, 11, 19, 20–21
Waterway policy, declaration of governors	340	7
Wax, brood comb, bleaching	334	30
extraction and extractors, directions	334	29–30
Weasels, description and beneficial habits	335	30
Webworm, alfalfa, control by disking	339	41
Weed seeds, dissemination, feeding stuffs and manure	334	18–19
tobacco seed beds, destruction, methods	343	7–9
Weeds, alfalfa, control	339	11–12, 14, 19–20, 32, 38–40, 43, 44, 47, 48
	342	14–16
willow holts, suppression	341	14, 19, 22, 43, 44–45
Weevil, cotton boll. *See* Boll weevil.		
WESTGATE, J. M., bulletin on "Alfalfa"	339	1–48
West Virginia, game laws, 1908	336	24, 34, 45, 53
Wheat and vetch mixture as feed for dairy cow	337	16, 22
breeding, directions	334	6–8
dry-farm crop, rank	329	11, 14
screenings, digestibility	334	19
seed, quality	334	9
winter, pasturing hogs, practices in Kansas and Oklahoma	331	10–11
WHITAKER, GEORGE M., article on "The milk supply of southern cities"	349	17–28
Willow, basket, distribution, culture, manufacture, etc	341	1–45
growing, methods, sections, requirements, cost, etc	341	8–14, 22, 27–32, 42–45
harvesting, drafting, peeling, etc	341	14–18, 23–27, 31–32, 45
holts, location, preparation, care, etc	341	11–15, 19–27, 44–45
planting directions	341	13, 20–22, 44
rods, qualities, sizes, importance of sorting, etc.	341	10, 15, 16, 19, 27, 33, 36, 39, 43–44, 45
trade, conditions in America	341	7–8, 35–42, 45
use, history, and production in foreign countries.	341	7–8, 35, 42
varieties for growing in America, description in detail	341	32–34, 43–44
French, use by American manufacturers	341	8, 36–37, 38–39
golden, growing on lawn	329	18–19
ware, manufacture in the United States	341	35–42, 45
Wilt, cotton, description, distribution, resistant varieties of cotton, etc	333	1–24
spread, control, etc	333	7–13
diseases, similarity of fungi	333	10
resistant cotton, breeding, methods	333	22–24

	Farmers' Bulletin No.	Page.
Wind-breaks, drifting soil, value and methods of establishing	342	9–10
fig protection, trees best adapted	342	20
home protection, recommendations	329	17, 19
Winter crops, South, purpose and success in growing	326	14–15
Wire, fencing, for fox yards	328	10
stretcher, types, description, use, and cost	347	21
Wisconsin, game laws, 1908	336	24, 34, 42, 45, 53
Wood alcohol, formaldehyde generation	345	7
materials, for repairing farm equipment	347	28–29
Woodcock. *See* Game laws, under the several States.		
Wood-working tools, for repair work on farm, descriptive list	347	12–19
WOOSLEY, H., et al., bulletin on "The cultivation of tobacco in Kentucky and Tennessee"	343	1–28
Workbench, farm, description	347	22–23
Workshop, farm, plan and equipment	347	26–27
Worm, army, relation to boll weevil control	344	35–36, 46
Wrenches, different types, description, use, and cost	347	12–13
Wyoming, elk herds, size, range, protection, etc	330	8–9
game laws, 1908	336	24, 35, 42, 45, 53

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